

REMARKS

Claims 1-9, 11-13, 26-29, and 36-40 are pending. Claims 10, 14-25 and 30-35 have been cancelled. Each of independent claims 1, 8, 26, and 36 has been amended to introduce clarifying amendments. Based on these clarifications, the Applicants submit that the claims are patentable over the cited art. Rejections targeting the canceled claims are rendered moot. Although the amendments were made to clarify aspects of the invention, the Applicants reserve the right to reintroduce claims of similar or broader scope in a later continuation application, if so desired. No new matter has been introduced as a result of these amendments.

Section 101 Subject Matter

Claim 8 has been amended to include the feature of displaying the image of the object according to the lighting characteristic. Claims 9 and 12-13 depend from claim 8. Applicants respectfully request that the rejection of claims 8, 9, and 12-13 be removed in light of this amendment.

Rejections under 35 USC 103(a)

Claims 1-3, 8-9, 12-13, and 26-31 were rejected as being unpatentable over the article by Sloan et al. in combination with Neagle and Ewins. In light of the amendments and the arguments contained herein, the Applicants respectfully request reconsideration of these rejections.

Claim 1 has been amended to include the feature of displaying a video object in real time during a video presentation. As discussed during the interview of November 16, 2006, the Sloan article is directed to a static image where lighting characteristics are stored and then used at a later time to display the static image, as contrasted to the values being calculated according to the amendments to claim 1, i.e., during a video presentation.

Continuing with claim 1, the Examiner acknowledges that the combination of Sloan does not teach a sampling location within a texel. The Examiner relies on Neagle to teach this feature and provides that the motivation for combining the references is to sample at a location that is more representative of the given texel than any neighboring texel. With regard to the stated motivation, the present application specifies sampling at a center point of a texel and there is no mention of neighboring texels. Furthermore, as discussed in the interview and as stated in a previous Office action response, Neagle does not teach the feature of sampling at the center of a texel, as Neagle is limited to supersampling for pixel data, as pixels are not texels. Texels exist in 3D space, or world space, while pixels are in 2D space. Furthermore, Neagle specifies sampling a center of a pixel area, i.e., a neighborhood or group of pixels (see paragraph 256). The supersampling provided through Neagle refers to when a greater number of pixel data are available than can be displayed on a display screen. Thus, to minimize aliasing and pixilation, supersampling is applied where some of the extra pixel data is used to modify the displayed pixels. A pixel is still a single data point and cannot be sampled at a center point as this is meaningless for pixel data. A neighborhood of pixels may be used to modify the pixel data, as taught by Neagle, however, this does not disclose determining an approximation at a center point of a texel and does not provide motivation for doing

so. Accordingly, claims 1-3 are patentable over the cited references for at least the above stated reasons as Ewins does not cure the deficiencies of Sloan or Neagle.

Claim 8 includes the features of incorporating lighting characteristics of an image of an object into a texture map for display in real time during a video presentation. As discussed during the interview of November 16, 2006, the Sloan article is directed to a static image where lighting characteristics are stored and then used at a later time to display the static image, as contrasted to the values being calculated according to the amendments to claim 1, i.e., during a video presentation. Claim 8 also includes the feature of determining a lighting characteristic associated with a texel of the texture map by sampling a center point of the texel. As discussed above with regard to claim 1, Applicants disagree that Neagle teaches this feature. Accordingly, claim 8, 9, and 12-13 are patentable over the cited references for at least the above stated reasons as Ewins does not cure the deficiencies of Sloan or Neagle.

Claims 26-29 were rejected as being unpatentable under the same rationale as for claim 8. Amended claim 26 and dependent claims 27-29 are now patentable over the cited combination for at least the same reasons as specified above with regard to claim 8.

Claims 4-7 and 11 were rejected as being unpatentable over Sloan and Neagle in view of Ewins and Cignoni. Claim 4 depends from claim 1 and claim 11 depends from claim 8. Claims 1 and 8, as amended are patentable over the cited combination of references for at least the reasons stated above since Cignoni does nothing to cure the deficiencies of Sloan, Neagle and Ewins.

Claims 36-40 were rejected as being unpatentable over the combination of Sloan, Drebin, and Ewins. Claim 36, as amended includes the feature of circuitry for determining the self shadow and self interreflection lighting characteristics in real time

Application No. 10/645,694
Office action response dated November 30, 2006
Responsive to Office Action Dated September 6, 2006

during a video presentation through a series of multiply and add operations, resulting in data that represents surface reflectance. As discussed above with regard to claim 1, Sloan teaches a static image where lighting characteristics are stored and then used at a later time to display the static image. Accordingly, it cannot be reasonably asserted that Sloan teaches the feature of determining the self shadow and self interreflection lighting characteristics in real time during a video presentation. Drebin and Ewins do nothing to cure the deficiencies of Sloan. Thus, claims 36-40 are patentable over the cited references for at least these reasons.

In view of the foregoing, Applicants respectfully submit that all of the pending claims are in condition for allowance. A notice of allowance is respectfully requested. In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 774-6921. If any fees are due in connection with the filing of this paper, then the Commissioner is authorized to charge such fees to Deposit Account No. 50-0805 (Order No. SONYP025). A copy of the transmittal is enclosed for this purpose.

Respectfully submitted,
MARTINE PENILLA & GENCARELLA, LLP



Michael L. Gencarella
Registration No. 44,703

710 Lakeway Drive, Suite 200
Sunnyvale, California 94085
Telephone: (408) 749-6900
Customer No. 25920